

Take Flight

Post Session Lessons Provided by:



Dear Teachers:

Thank you for participating in the Take Flight program. We hope you enjoyed your pre-video conferencing lessons and your video conference session. We hope that you will take the time to conduct the enclosed lessons in your classroom.

These activities are meant to reinforce and expand on the ideas learned in the previous sessions by giving a full view of aviation historically and as a career field. These lessons will help students understand where the ideas for human flight came from, where the career of aviation is today and where aviation is going. It is our hope that these lessons provide a vehicle by which students can think about aviation in a real life context by learning more about the careers that are available to them with the right training and education.

Upon finishing these lessons, please return the program supplies that we sent to you along with your completed teacher and student evaluations. The answers that you and your students provide will assist us in discovering the exact learning that occurred during the program period and will help improve our program.

Once again, thank you for participating in Take Flight.

Sincerely,

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Lesson: How Long has Humankind Wanted to Fly?

Grades: 3-8 (lesson can alter depending on age level and experience of students)

Duration: Two class periods (about 45 minutes each)

National Learning Standards:

History and Nature of Science

NS.5-8.7

As a result of activities in grades 5-8, all students should develop understanding of

- Science as a human endeavor*
- History of science*

Overall Goal:

Students will learn the great and long history of human's interaction with aviation.

Objectives:

Students will:

- Understand the progression of flight from early civilizations' use of kites to today's manned and unmanned jets and spacecraft*
- Guess the next steps in the human endeavor of aviation*

Background Information:

Today, it is hard for many people to think of a world without regularly scheduled commercial passenger flights. However at one time this concept was not only unheard of, but because of the lack of human knowledge about the physical forces of nature, it was in impossibility.

With simple beginnings, the progression of human technology in aviation occurred with the invention of the kite around 400 BCE. By the 18th century, after years of stories, trial and error, scientific studies and experiments, humans were able to achieve lighter than air flight with the invention of the hot air balloon. About 120 years later, heavier than air vehicles debuted with the Wright Flyer and only 60 years following, the advent of space flight made possible for humans to travel outside of earth's atmosphere to learn even more about the planet on which we live.

Materials for teacher to provide:

Pens/Pencils/Markers/Colored Pencils/Crayons

Materials for Intrepid to provide:

PowerPoint presentation with history of flight.

Procedure:

- Teacher will review with students what they learned about flight with the Intrepid Museum.
- Teacher will remind students that although we looked at the differences between two different types of aircraft, these are only two examples of types of aircraft that are important to the history of aviation.
- Teacher will ask students to name more aircraft that they are familiar with
 - Trigger Questions
 - *What other types of aircraft exist?*
 - *What are they used for?*
 - *Why are they important to the history of aviation?*
- Teachers will tell the students that they are going to learn about the history of aviation through the creation of a time line.

- Trigger Questions:
 - *What is a time line?*
 - *Why are time lines important?*
 - *What do time lines tell us?*
- Teacher use the CD provided by Intrepid Museum to discuss with their students the history of flight.

The time line categories and accomplishments are listed below:

[Early Aviation History:](#)

Kites

Greek Mythology

Tower Jumpers

Leonardo DaVinci

[Lighter than air flight](#)

Hot air balloon

Reconnaissance/French

Dirigible

Reconnaissance/American

[Early Heavier than air flight](#)

Monoplane Glider

Wright Flyer

Flight across the English Channel

First Aircraft Carrier commissioned

[Pioneering Flight](#)

Non-stop flight across the Atlantic Ocean

Female solo across the Atlantic Ocean

Supersonic Flight

Hypersonic Flight

[Space Flight](#)

First human space flight

First female space flight

Moon landing

Space Station

Space Shuttle

- When teacher is finished with PowerPoint presentation, the students will review what they have learned.
 - Trigger Questions
 - *What did you notice about the time periods that we looked at?*
 - *What time period was there the least amount of notable aviation accomplishments?*
 - *When was there the most?*
 - *Why do you think this is?*
 - *Do you think there were other accomplishments that are not listed here?*
 - *What other accomplishments do you think is still ahead of us?*
- Students will use their notebook to write what they think the next huge accomplishment will be in aviation. They will also use their notebooks to show what they think that accomplishment will “look like.”
- Note: An extension of this activity can be for students to look up on NASA’s website to look for more information regarding space flight and what the National Aeronautic and Space Administration is looking towards for its next accomplishments.

Time line:

When: Around 400 BCE (**B**efore the **C**ommon **E**ra)

Who: Chinese

Where: China

What: Invention of the kite

Why: Chinese people invented the kite for religious ceremonies, but they also used them for fun.

They were also used to test weather conditions.

Source: <http://inventors.about.com/library/inventors/blearlyflight.htm>

When: 3rd Century BCE (300-200 BCE)

Who: Appolonius of Rhodes (?)

Where: Greece

What: Greek Story of Jason and the Argonauts written which includes the stories of Dadelus and Icarus.

Why: Earliest known story of human flight as subject matter.

Source: http://en.wikipedia.org/wiki/Greek_mythology

When: 200 BCE- 15th Century CE (Common Era)

Who: Man kind

What: Trying to fly

What: People tried to fly like birds. Tower jumpers tried to create “wings” that they attached to their arms to try to fly. People used high towers or other structures to launch their bodies from in an attempt to fly. They found that their bodies were too heavy and arms not strong enough to sustain flight. Many people were seriously injured or died in these attempts.

Source: <http://inventors.about.com/library/inventors/blearlyflight.htm>

When: 1485 CE

Who: Leonardo DaVinci of Italy

Where: Italy (?)

What: Designed the Ornithopter

Why: First Scientific Study of Human Flight and use of mechanics to create a machine that can achieve flight. Many 19th century aviation pioneers examined his designs to assist them in their own creations.

Source: <http://inventors.about.com/library/inventors/blearlyflight.htm>

When: 1783

Who: Joseph and Jacques Montgolfier of France

Where: France

What: Launched the hot air balloon

Why: Created the first lighter than air structure to fly. The paper-making bothers noticed that when air was heated, it rose. They realized by putting heated air into a balloon like structure, they could make the balloon rise. The first attempt at flight used farm animals in a basket below the hot air balloon. The animals stayed aloft for 8 minutes and landed safely 2 miles away. First human flight occurred later that year. The flight lasted 25 minutes and flew a distance of 5.5 miles.

Source: http://en.wikipedia.org/wiki/Montgolfier_brothers

When: 1794

Who: French Republic

Where: Fleurus, Belgium

What: Reconnaissance Balloon

Why: In a battle against the Austrian Army, the French used hot air balloons as reconnaissance vehicles. This was the first use of an aircraft in battle that helped to determine the outcome of a major conflict.

Source: [http://en.wikipedia.org/wiki/Battle_of_Fleurus_\(1794\)](http://en.wikipedia.org/wiki/Battle_of_Fleurus_(1794))

When: 1852

Who: Henri Giffard of France

Where: France

What: The dirigible

Why: Giffard created the first powered and controlled flight traveling 27 km from Paris to Trappes, France. This airship (known as a dirigible) used hydrogen rather than heated air as its fuel. Airships became the commercial “airliners” of their day, with people being carried across country or across the Atlantic Ocean. Airships were used widely until the 1940’s when their technologies were surpassed by the airplane.

Source: <http://en.wikipedia.org/wiki/Airship>

When: 1853

Who: George Cayley of England

Where: England

What: The mono plane glider

Why: George Cayley is said to be the father of human flight. His work spanned about 50 years. He was the first person to identify the aerodynamic four forces of flight: thrust, lift, drag and gravity. In 1853 his monoplane glider carried an employee of his who became the first adult heavier than air aviator (a child had been an aviator on one of his gliders prior to 1849).

Source: http://en.wikipedia.org/wiki/George_Cayley

When: 1861

Who: Union Army of the United States

Where: Near Arlington, Virginia, USA

What: Reconnaissance Balloon

Why: This was the first time that reconnaissance balloons were used in the United States. During the Civil War, the Union used a reconnaissance balloon to locate Confederate Troops. From the reconnaissance balloon, American Aeronaut Thaddeus Lowe located Confederate troops and telegraphed back to the Union Army the location of the Confederates. Union guns were aimed and fired accurately at the Confederate troops without actually being able to see them – a first in the history of warfare.

Source:

http://www.centennialofflight.gov/essay/Lighter_than_air/Civil_War_balloons/LTA5.htm

When: December 17, 1903

Who: Orville and Wilber Wright of the United States

Where: Kittyhawk, North Carolina

What: Bi-plane

Why: The Wright brothers were the first people to have a sustained, controlled and powered heavier-than-air flight in 1903. The world’s first flight reached an altitude of 10 feet, lasted 12 seconds and covered a distance of 120 feet.

Source: http://en.wikipedia.org/wiki/Wright_Brothers

When: April 16, 1912

Who: Harriet Quimby of the United States

Where: England

What: Flight across the English Channel to France

Why: Harriet Quimby was the first woman to fly across the English Channel from Dover, England to Hardelot-Plage, Pas-de-Calais. In 1911 she had been the first Woman to earn her pilot’s certificate in the United States. Her flight across the English Channel took 59 minutes.

Unfortunately, her feat was overshadowed by one the largest maritime disasters in history: the sinking of the HMS Titanic.

Source: http://en.wikipedia.org/wiki/Harriet_Quimby

When: September 6, 1918

Who: The British Royal Navy

Where: England

What: First aircraft carrier commissioned, HMS Argus

Why: The Royal Navy converted what was to be an ocean liner into the first example of what was to be the standard design of a the modern aircraft carrier enabling wheeled aircraft to take off and land from a flight deck.

Source: [http://en.wikipedia.org/wiki/HMS_Argus_\(149\)](http://en.wikipedia.org/wiki/HMS_Argus_(149))

When: May 20, 1927.

Who: Charles Lindberg of the United States

Where: Atlantic Ocean

What: Non-stop flight across the Atlantic Ocean

Why: Charles Lindberg was the first man to fly non-stop across the Atlantic Ocean from Roosevelt Field on Long Island, NY in the United States to Paris, France. The flight lasted 33 hours and 30 minutes.

Source: http://en.wikipedia.org/wiki/Charles_Lindberg

When: May 20, 1932--

Who: Amelia Earhart of the United States

Where: North Atlantic Ocean

What: Solo Flight across the North Atlantic Ocean

Why: Amelia Earhart was the firth woman to fly solo across the Atlantic Ocean. Although her flight was from Newfoundland in Canada to Culmore, Northern Ireland. Her flight lasted 14 hours and 56 minutes. In 1935 she became the first person to fly from Honolulu, Hawaii to Oakland, California. In 1937 she went missing over the central Pacific Ocean near Howland Island. Her remains were never found.

Source: http://en.wikipedia.org/wiki/Amelia_Earhart

When: October 14, 1947

Who: Chuck Yeager of the United States

Where: Muroc Army Air Field (Edwards Air Force Base)

What: Supersonic Flight

Why: Chuck Yeager flew the experimental Bell X-1 to become the first man to break the sound barrier, traveling at Mach 1. His altitude was 45,000 feet (13,700 meters). Yeager went on to break several other speed and altitude records as well.

Source: http://en.wikipedia.org/wiki/Chuck_Yeager

When: 1957

Who: Soviet Union

Where: Space

What: Sputnik, 1st human-made satellite

Why: At the end of WWII, the United States of America was in competition with the USSR to dominate earth's last frontier: Space. In 1957, the Soviet Union launched an unmanned satellite into earth's orbit becoming the first country to do so. The satellite was 58 cm (23 in) in diameter.

Source: <http://en.wikipedia.org/wiki/Sputnik>

When: June 8, 1959

Who: Collaboration of NASA, US Navy, US Air Force and North American Aviation (who built it for the others)

Where: California

What: Hypersonic Flight

Why: The X-15 remains the fastest and highest flying manned aircraft ever flown (with exception to the space shuttle). The reason for the X preceding the number designation is because of the nature of the research done with the aircraft. It was experimental. The testing that was conducted for this aircraft allowed NASA to collect data that was vital for their space programs including the Space Shuttle which was developed in the 1970's.

Source: <http://www.boeing.com/history/bna/x15.htm>
<http://www.aerospaceweb.org/aircraft/research/x15/>

When: April 12, 1961

Who: Yuri Gagarin of the Soviet Union

Where: Space

What: Human Space Flight

Why: Yuri Gagarin became the first cosmonaut to be launched into outer space and the first time any person had achieved orbit around the earth. The name of his space craft was Vostok 1.

Source: http://en.wikipedia.org/wiki/Vostok_1

When: June 16, 1963

Who: Valentina Tereshkova of the Soviet Union

Where: Space

What: Human Space Flight

Why: Valentina Tereshkova became the first woman to fly in space. Her mission, which lasted almost three days required her to conduct various tests on herself to collect data about how the female body reacts to space flight.

Source: <http://en.wikipedia.org/wiki/Tereshkova>

When: July 16, 1969

Who: NASA, United States

Where : Space

What: Space Flight to the Moon

Why: Apollo 11 was the first human space flight to land on the moon. The crew making up the Apollo 11 mission were Mission Commander, Neil Armstrong; Command Module Pilot Michael Collins and Lunar Module Pilot Edwin "Buzz" Aldrin.

Source: http://en.wikipedia.org/wiki/Apollo_11

When: April 19, 1971

Who: Soviet Union

Where: Space

What: Space Station orbit of earth

Why: Continuing the advancement of space exploration, the Soviet Union launched Salyut 1 which became the first space station to orbit earth. The subsequent space mission of Soyuz 11 was the first successful manned visit to Salyut 1.

Source: <http://en.wikipedia.org/wiki/Salyut>

When: April 12, 1981

Who: NASA

Where: Space

What: Space Shuttle Columbia launched

Why: The Space Shuttle is the first orbital spacecraft designed for reusability. It is the current mode of travel to space orbit for NASA astronauts. The space shuttles are scheduled for retirement in 2010 after 134 missions.

Source: http://en.wikipedia.org/wiki/Space_shuttle

When: January 3 and January 24, 2004.

Who: NASA

Where: Mars

What: Mars Rovers landed on Mars

Why: Part of NASA's Mars Exploration program, the Rovers are a long term effort of robotic exploration on Mars. A primary scientific goal of this mission is to search for and categorize a wide variety of rocks and soils that could hold clues to water activity on Mars. Although unmanned space flight has been going on for years, this is currently an important project for the following reasons:

- Determine whether Life ever arose on Mars
- Characterize the Climate of Mars
- Characterize the Geology of Mars
- Prepare for Human Exploration

<http://marsrovers.nasa.gov/overview/>

Lesson: What Careers Are in Aviation?

Grades: 5-8 (lesson can alter depending on age level and experience of students)

Duration: One class period (about 45 minutes)

National Learning Standards:

History and Nature of Science

NS.5-8.6

As a result of activities in grades 5-8, all students should develop understanding of:

- Populations, resources and environments*
- Science and technology in society*

Economics

NSS-EC.5-8.3

At the completion of Grade 8, students will know the Grade 4 benchmarks for this standard, and also understand:

- People in all economies must address three questions: What goods and services will be produced? How will these goods and services be produced? Who will consume them?*

Overall Goal:

Students will learn about the careers available in the field of aviation.

Objectives:

Students will

- Read information cards relating to different fields in aviation*
- Discover the types of careers that are available in the field of aviation*
- Understand the progression of aircraft construction and use from idea to flight*

Background Information:

Intrepid's main purpose was to act as a floating airport. As such, several jobs highlighted in this lesson could have been, in one form or another, on board the Intrepid or part of the design team that created military aircraft. The United States Navy, for example, employs people who work on aircraft carriers to ensure the safe launching and recovery of aircraft. Go to the following website to learn and understand the specific rolls of just the flight deck crews on an aircraft carrier:

<http://usmilitary.about.com/library/milinfo/navycarriers/blrainbow.htm>

Students interested in aviation have a plethora of career fields to choose from; engineering, development, safety, design, tourism and marketing are just a few. We hope that this lesson allows students to understand that you don't have to be a pilot to be involved in the exciting world of aviation.

Materials for teacher to provide:

Tape

Materials for Intrepid to provide:

Career information cards

Procedure:

- Teacher will ask students about what they know about careers in aviation. When they get answers from the students, they should be written on the board.
 - Trigger Questions:
 - *What jobs are there in aviation?*
 - *What do these people do?*
 - *Where do these people work?*
 - *Why are these jobs important?*
- Teacher will tell the students that there is much more involved in aviation than just piloting an airplane. We have created two main categories and four subcategories of where people in aviation work (Please note: We recognize that careers in aviation are too complex and varied to break down in such simple terms. However, for the purpose of this lesson, we believe that it is much more easily remembered by students if they are categorized in the ways following. Additionally we have not included every career field in aviation. This is by no means to lessen the importance of those careers. If the teacher would like to discuss additional careers we encourage this conversation).
- Teacher will write the aviation career categories up on the board and explain what each category means writing key words that will help the students remember how the categories are divided.
 - Category: Behind the Scenes
 - Subcategory: In the Laboratory – *People who design, construct and test aircraft.*
 - Subcategory: In the Office – *People who are involved in advertizing and selling airline tickets, or airline safety and rules of the industry.*
 - Category: At the Airport
 - Subcategory: On the Ground – *People who are involved in making sure the airport is running effectively.*
 - Subcategory: In the Air – *People who are part of the aircraft crew.*
- Teacher will divide the class into pairs. Each student pair will receive an information card connected to a career in aviation. Each card will have a picture, job description and the subject areas that would help them prepare for that job.
- Teacher is encouraged to use the job information cards that they think are most appropriate for their class. If teachers have a smaller class, they might choose to hand one card per student. Teacher should also be encouraged to discuss with students any of the vocabulary on the cards that might be unfamiliar to their class.
- Students will read the information cards and work in pairs to determine what category/subcategory their job card will fit into.
- When they have made their determination, one student from each of the student pairs should read their card to the class and the other will post their card to the board under the subcategory that they think their job card fits into.
- When all students have posted their cards, teacher should lead discussion about their findings and discuss the progression of aircraft design to aircraft flight the way that we know it.
 - Trigger Questions:
 - *Were you surprised by the findings?*
 - *What subjects did you find that you had to be good at?*
 - *Did you know that there were so many careers possible in aviation?*
 - *Is there a subject or subjects in particular that are important for the aviation field?*
 - *Do you think any of these jobs could have been performed on the Intrepid?*
- When discussion is finished, students should write in their workbooks and answer the following questions:
 - *What career would you want to be part of?*

- *Why?*
- *What subjects are you good at that would make you good at this career?*
- *What subjects would you need to improve in to make you good at this career?*
- *What steps can you take to become better at this subject?*

Aviation Job Descriptions:

Behind the Scenes- in the laboratory and in the office.

IN THE LABORATORY

Aerospace Engineer:

Some of the things I do: *I design and test aircraft to determine its performance and airworthiness.*

Some subjects/things I should be good at: *Math, science, reading and analyzing data.*

Aeronautical Drafter:

Some of the things I do: *I prepare drawings that detail plans and specifications given to me by an aerospace engineer to create aircraft.*

Some subjects/things I should be good at: *Math, science, computer technology and drawing.*

Aircraft Engine Specialist:

Some of the things I do: *Test and inspect aircraft engines to make sure they are working properly.*

Some subjects/things I should be good at: *Math, reading, problem solving and analyzing data.*

Airplane Assemblers

What I do: *I put together aircraft frames, cockpit controls, landing gear and other systems that go into the structure of an aircraft.*

Some subjects/things I should be good at: *Math, reading charts and plans and building things.*

Avionics Specialists and Technicians

Some of the things I do: *I create, repair and maintain electric equipment used for aircraft navigation, radio communications and weather radar systems.*

Some subjects/things I should be good at: *Math, reading, analyzing data and computer technology.*

IN THE OFFICE

Flight Safety Officer

Some of the things I do: *I provide flight safety training to professionals and pilots that fly planes. I can also teach investigators how to look for evidence at the scene of an aircraft accident.*

Some subjects/things I should be good at: *Social studies, science, teaching and gathering evidence.*

Airline Sales and Service Agent

Some of the things I do: *I help passengers plan their trips, sell tickets for airlines and pass information from the airline companies to the aircraft to prepare for the flight.*

Some subjects/things I should be good at: *Math, social studies, organization and speaking more than one language.*

Airline Marketing Manager

Some of the things I do: *I make advertisements for airlines to convince people that the airline that I work for is the best.*

Some subjects/things I should be good at: *Math, art, analyzing data and communication.*

Aviation Lawyer

Some of the things I do: *I work with airlines and other businesses in aviation to ensure they are following rules and regulations concerning safety and maintenance.*

Some subjects/things I should be good at: *Social studies, history, reading and analyzing data.*

At the Airport- on the ground and in the air

ON THE GROUND

Airfield Operations Specialist

Some of the things I do: *I am in continuous radio contact with air-traffic control and maintenance personnel to ensure safe takeoffs and landings of aircraft.*

Some subjects/things I should be good at: *Math, computer technology, analyzing data and communications.*

Airline Ground Crew

Some of the things we do: *We work at airports to keep airplanes running efficiently. Some of our duties include de-icing, fueling and directing airplanes.*

Some subjects/things we should be good at: *Math, reading charts and plans, communication and repairing machinery.*

Airport Security Officer

Some of the things I do: *I ensure the safety of passengers and aircraft crew while they are at the airport. I may be in charge of checking luggage at airport security points to make sure that people are not bringing dangerous items onto an aircraft.*

Some subjects/things I should be good at: *Social studies, reading, communication and analyzing data.*

Baggage Handler

Some of the things I do: *I make sure that passengers' luggage is checked in, correctly marked and loaded or unloaded from the correct airplane.*

Some subjects/things I should be good at: *Reading, organizing, first aid, and observation skills.*

Transport Scheduler

Some of the things I do: *I organize the schedules of trucks, trains or busses to make sure that those vehicles are leaving and arriving to different areas on time.*

Some subjects/things I should be good at: *Social studies, reading, organizing, analyzing data.*

Air Traffic Controller

Some of the things I do: *I rely on radar and visual observation to communicate with pilots how they should fly their aircraft.*

Some subjects/things I should be good at: *Science, math, analyzing data and communication.*

Meteorologist

Some of the things I do: *I am the forecaster who provides the day-to-day, hour-to-hour observations, analyses, forecasts, warnings and advice to pilots, airport operators and airlines. I may also report weather conditions expected at airports.*

Some subjects/things I should be good at: *Science, math, reading and analyzing data.*

Aircraft Mechanic:

Some of the things I do: *Fix aircraft.*

Some subjects/things I should be good at: *Math, reading charts and plans and repairing machines.*

IN THE AIR

Flight Attendant

Some of the things I do: *I ensure that safety and security regulations are being followed on a passenger airplane and make flights comfortable and enjoyable for the passengers.*

Some subjects/things I should be good at: *Social studies, speaking more than one language, first aid and communication.*

Pilot

Some of the things I do: *I fly aircraft and ensure the safety of my passengers by conducting safe take offs and landings.*

Some subjects/things I should be good at: *Math, communication, first aid, reading, analyzing data and social studies.*

Glossary

After completing the post-visit lessons, students should have a basic understanding of the following terms and concepts:

Aeronautics is the word used to describe the design, construction, mathematics and mechanics of aircraft and other flying objects; the theory and practice of aircraft navigation

Airline is the word used to describe a commercial enterprise that provides scheduled flights for passengers

Airship is the word used to describe a lighter-than-air aircraft that can be steered and propelled through the air using rudders and propellers

Astronaut/Cosmonaut is the word used to describe a person trained by a human spaceflight program to command, pilot, or serve as a crew member of a spacecraft

Avionics is the word used to describe science and technology of electronic systems and devices for aeronautics

Balloon (Hot Air) is the word used to describe balloon for travel through the air in a basket suspended below a large bag of heated air

Bi-plane is the word used to describe a fixed-wing aircraft with two main wings. The Wright brothers' Wright Flyer used a biplane design

Dirigible is the word used to describe a cigar-shaped aircraft that is filled with a gas that is lighter than air. The Goodyear Blimp is a small dirigible

Drafter is the word used to describe a person who prepares technical drawings and plans, which are used to build manufactured products.

Engineer is the word used to describe a person who uses scientific knowledge to solve practical problems

Glider is the word used to describe any heavier-than-air aircraft optimized for unpowered flight

Heavier Than Air Flight is a phrase used to describe an aircraft that uses means other than lighter than air gasses to fly. Often this phrase is used interchangeably with airplanes, jets and helicopters.

Hypersonic Flight is the phrase used to describe flight conducted at speeds greater than Mach 5, or five times the speed of sound

Lighter Than Air Flight is a phrase used to describe a balloon or other aircraft that flies because it weighs less than the air it displaces

Lunar Module is the portion of the Apollo spacecraft that achieved the transit from lunar orbit to the surface and back.

Mach is a unit measurement that describes the speed of sound. Mach number is the speed of an object moving through air divided by the speed of sound as it is in the substance that it is flowing through.

Machine is the word used to describe any mechanical or electrical device that transmits or modifies energy to perform or assist in the performance of human tasks.

Mechanics is the branch of physics concerned with the motion of bodies in a frame of reference

Meteorologist is a specialist who studies processes in the earth's atmosphere that cause weather conditions

Monoplane is an airplane with a single wing

Mythology is a body or collection of myths belonging to a people and addressing their origin, history, deities, ancestors, and heroes

NASA is the acronym used for the National Aeronautics and Space Administration. It is the unit of the federal government charged with operating the nation's space exploration and aeronautics programs.

Ornithopter is an aircraft that flies by flapping its wings.

Reconnaissance is an inspection or exploration of an area, especially one made to gather military information.

Satellite (man-made) is an object launched to orbit Earth or another celestial body.

Space Station is a large satellite equipped to support a human crew and designed to remain in orbit around Earth for an extended period and serve as a base for launching exploratory expeditions, conducting research, repairing satellites and performing other space-related activities.

Supersonic is relates to a speed greater than the speed of sound in a given medium, especially air but not reaching hypersonic speeds.

Tower Jumpers are people who experimented with trying to fly by creating and building various wing designs and jumping off of structures to see if they could sustain flight.

Vehicle is any self-propelled device designed to transport people as well as cargo.